

Aspen Stand Structure Assessment Method

CORE STRUCTURAL INFORMATION

1. Place a 5.62 m (18.4') radius plot (100m²) within a location typifying the stand. If the stand is heterogeneous, put it in a location typifying a distinct part/structure within the stand, then for the second plot put it in an area with a different structure.
2. Visually estimate cover of overstory, recruitment, and understory aspen within the plot. For overstory and recruitment aspen you are estimating the percent coverage of the sky above the plot. For understory aspen you are estimating the percent coverage of the ground within the plot.
 - i. Overstory trees are equal to or greater than 75% of mature stand height (which varies according to site conditions).
 - ii. Recruitment trees are equal to or greater than 2 m tall and up to 75% of mature stand height.
 - iii. Understory trees are less than 2 m tall.
 - iv. Senescent overstory: Determine the percent of overstory trees that are dead or showing signs of decline, including many dead limbs, conks, or weeping cankers.

ADDITIONAL INFORMATION

1. Photos: Digital photographs add to the structural information, be sure to capture these three aspects of the plot and surrounding stand.
 - i. *General aspect* of the stand, taken horizontally from the center of the plot
 - ii. *Overstory aspen* taken directly up in the center of the plot
 - iii. *Understory forbs and grasses*, taken directly down, from the center of the plot
2. Notes: Brief notes may add to the information.
 - i. Approximate size of the stand
 - ii. Slope
 - iii. Aspect
 - iv. Elevation
 - v. *Understory notes*: Dominant understory forbs, grasses, shrubs
 - vi. *Animal sign*: Ungulate (wild, livestock) scat; beaver cuttings
 - vii. *Conifer notes*: Presence, diversity and abundance of conifers
 - viii. *Other notes*: Presence/abundance of downed logs, and any other noteworthy characteristics.

REPEAT ALL STEPS FOR A SECOND PLOT

1. Select a second plot that typifies a different part of the stand.

Quantitative Analysis

Depending on the purpose of the rapid assessment, any or all of the following quantitative analyses are easily generated for a given group of stands if data are entered into an Excel table:

1. Average percent cover of overstory, recruitment, and understory aspen
2. Proportion of stands with senescent overstory in plots
3. Percent/proportion of stands sampled that are
 - a. *Single-tier stands*: Recruitment tree cover 0-0.3 times that of the overstory
 - b. *Two-tier stands*: Recruitment tree cover 0.4-1.7 times that of the overstory; sparse understory trees.
 - c. *Multi-age stands*: Overstory cover less than 65%; recruitment cover 0.4-1.0 of the overstory; and more than 5% cover of understory trees.
 - d. *Replacement stands*: Recruitment cover is over 40%; and more than 1.7 times that of the overstory.

A note: This protocol was developed and used by Nick Otting and Danna Lytjen to examine 129 aspen stands in Steens Mountain of southeastern Oregon. The aspen stands examined were not mixed with conifers. This protocol would need to be altered for use in mixed aspen/conifer stands to document the presence and structure of conifer as well as aspen.